

Translation of Page 1

Amended on May, 27, 2005

DESCRIPTION

Display and Control Device for Medical Equipment

The present invention relates to a display and control device for medical equipment, in particular life support systems such as heart-lung machines or artificial respiration devices.

In order to be able to safely operate and monitor medical equipment, display and control devices must be provided on this equipment, which allow the user to determine the operating state of the equipment in a clear manner and to intervene in the operation of the equipment using control elements. Thus, in heart-lung machines, for example, (hereinafter also referred to as HLM) display and control elements are provided for the different units and components, e.g. the blood pumps or the oxygenator, via which the user can monitor and influence the operation of the HLM units. In addition, display and control elements are provided for various sensors, for example fill level sensors, temperature sensors or air bubble detectors, on which the user ...

Translation of Pages 3 and 3a,
Amended on May 27, 2005

... medical device. It must be noted in this regard that touch-sensitive surfaces are by nature susceptible to mechanical defects. In addition, a complex and expensive development process for the GUI unit and its controls is necessary for complex applications, in particular when realising language-specific variants.

As a result, such display and control devices can only be used for safety-critical applications in life support systems such as heart-lung machines or artificial respiration devices at substantial cost (redundant control panels, specifically adapted operating systems, etc). Where a redundant design is not possible or expedient, the display and control device must be provided as an exchangeable part which, upon failure of the display and control device being used, can be exchanged therewith. This procedure is, however, unsatisfactory in view of the costs for providing a replacement panel.

US 6.496.359 B2 describes modular computers which, in addition to the processor that provides the computing power and a memory, each also comprise a flat display panel with a touch-sensitive surface. The computer modules are self-sufficient and each constitute an individual computer with a touch-sensitive display. The computer modules can be attached to a panel which provides the power supply for the computer modules and also enables communication with the computer modules from the outside, for example communication with an external server. The computer modules can and should,

however, also communicate amongst one another in order to be able to act together. The modularity and interactability create the possibility of combining the computing power and display surface into larger units by connecting several computer modules together, such that adequate computing power and a continuous display surface is thereby created.

In view of the above, the aim of the invention is to specify a display and control device for medical equipment, in particular heart-lung machines or other life support systems such as artificial respiration systems, in which continued operation can be ensured in an economic manner in the case of a defect.

This aim is achieved by a display and control device having the features of patent claim 1. Advantageous embodiments can be seen from the sub-claims.

According to the invention, a plurality of touch-screen GUI units are combined into one modular display and control device. The GUI units are virtually identical in structure
...

(continued on page 4)